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Restoration of the Church Gilded Wall Icon Case

Abstract: A huge number of church decorative and applied art monuments, which lost their original appearance during the years of timelessness and persecution of religion, need competent, scientifically based conservation and restoration, which will prolong the life of these monuments and revive them for contemporaries and descendants. The article is devoted to the restoration of two gilded frames of a kiot (icon case) with mastic stucco ornament in the neoclassical style of the late 19th century. The study subject was wooden gilded frames of kiots with mastic decoration in the neoclassical style. The project purpose was to return the exposition form to the church decorative and applied art object—the kiot (icon case), which lost it as a result of a prolonged violation of storage and operation conditions. In preparation for the restoration work, a study of the theoretical works of Russian and foreign specialists in this field was conducted. In the course of the work, complex techniques of conservation, restoration and recreation, associated with local losses of stucco decoration, the presence of solid late paints of the author's finishing of the kiot (icon case) with bronze paint, were applied. The article is intended both for professionals who are directly involved in the restoration of church cultural heritage works, fund and museum exposition curators, guides, and art historians.

Keywords: icon case, kiot, church decorative and applied art, conservation, restoration, mastic decor, recreation of local loss of gilding, tinting of recreated gilding.

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Реставрация церковного золочёного настенного киота

Аннотация: Колossalное количество памятников церковного декоративно-прикладного искусства, утративших свой первоначальный вид в годы бывшего гонения и гонений на религию, нуждаются в проведении грамотной, научно обоснованной консервации и реставрации, которая позволит продлить жизнь этих памятников и возродить их для современников и потомков. Статья посвящена реставрации двух золочёных рам киота с мастичным лепным орнаментом в стиле неоклассицизма конца XIX века. Предметом исследования были деревянные золочёные рамы киотов с мастичным декором в стиле неоклассицизма. Целью проекта было возвращение экспозиционного вида церковному предмету декоративно-прикладного искусства – киоту, утратившему его в результате длительного нарушения условий хранения и эксплуатации. В рамках подготовки к реставрационным работам было проведено исследование теоретических трудов российских и зарубежных специалистов в данной области. В ходе работ были применены

комплексные приёмы консервации, реставрации и воссоздания, связанные с локальными утратами лепного декора, наличием сплошных поздних закрасок авторской отделки киота бронзовой краской. Статья предназначена как для профессионалов, занимающихся непосредственно реставрацией произведений церковного культурного наследия, хранителям фондов и музейных экспозиций, экскурсоводам, искусствоведам.

Ключевые слова: киот, церковное декоративно-прикладное искусство, консервация, реставрация, мастичный декор, воссоздание локальных утрат позолоты, тонирование воссозданной позолоты.

Introduction

The relevance of the topic lies in the fact that a huge number of church decorative and applied art monuments, which lost their original appearance in the years of timelessness and persecution of religion, need competent, scientifically based conservation and restoration, which will prolong the life of these monuments and revive them for contemporaries and descendants.

The study subject was wooden gilded frames of kiots (icon cases) with mastic decoration in the neoclassical style.

The project purpose was to return the exposition form to the church decorative and applied art object—the kiot (icon case), which lost it as a result of a prolonged violation of storage and operation conditions.

Based on the purpose of the project, the following tasks were identified:

- conduct comprehensive scientific research on the monument before the restoration process begins;
- when performing experimental work, choose the most acceptable methods of conservation and restoration;
- determine the sequence of restoration processes;
- perform all planned restoration measures to return the church kiot (icon case) to its exposition appearance.

In performing this work, the historical method of studying the special literature on frame decoration was applied in order to identify the early technologies presented on the monument.

In the course of various studies of the restoration object and the implementation of the project, master restorers used the formulation of individual formulations from information sources containing information necessary for the restoration stages, e.g., the few sources “*Frame and Image*” by O.Y. Tarasov ([Tarasov, 2007](#)), “*Dress the Picture*” by O.A. Lysenko and “*Picture and Frame. Dialogues*,” contain information on the frame finishing and its variety, which allows the author to get acquainted with various finishing techniques, materials of its execution and changes during operation ([Rovinskaya & Lapitskaya, 1998](#)).

The restorer got information on the decorative finishing of frames from such books as “*Gilding, Silvering, and Bronzing on Wood*” by L.P. Antsov ([Antsov, 1907](#)), containing the recipe of the compositions with which the frames were finished at the end of the 19th and early 20th century.

One of the collections of the oldest recipes known to us from printed publications was the work “*A Book about Art or a Treatise on Painting*” of the Italian artist Cennino Cennini, who worked at the turn of the 14th and 15th centuries ([Cennini Cennino, 1933](#); [Cennini Cennino, 2018](#)). Basically,

the treatise is devoted to the work of the monumental painter, but his advice on preparation and gilding is relevant in our time. Since they convey to us not only the knowledge of technologies of that time, but also invaluable practical experience and advice of the most famous Italian master.

Translated by Mikhail Agentov in Moscow, in 1765, the book “*A Thorough and Clear Idea of Miniature Painting*,” which also has interesting sections devoted to preparation for gilding and gilding, was published. Published in Moscow *Craft Newspaper* for 1890 offered a variety of recipes for polymers and other formulations.

Another book worthy of the attention of contemporaries with acceptable recipes and tips is “*Gilding, Silvering, and Bronzing on Wood*” by L. Schmidt ([Schmidt, 1903](#)).

E. Kuzmichev and F. Shkulev in the book “*Gilding, Silvering, and Bronzing of Wood and Metals*,” published in Moscow in 1917, offered a recipe for French polish ([Kuzmichev & Shkulev, 1917](#)).

In Mukhortov’s book “Painting and Alfray Works,” several more recipes of the polymer are given ([Mukhortov, 1945](#)).

The performer got a good help in the work of recreating local losses of stucco decoration from the A.M. Shepelev’s book “*Modelling in a House and Apartment*,” using the recipe for making mastic presented in it ([Shepelev, 1995](#)).

The article is intended both for professionals who are directly involved in the restoration of works of church cultural heritage, curators of funds and museum expositions, guides, art historians and all lovers of decorative and applied art.

Results

Part One

A thorough visual inspection of the kiot surface finishing, followed by an analysis of the identified features of the technical condition of the base and options for both frames finishing, had great importance in the work of the researcher.

The kiot consisted of a wooden case with a glazed door, also known as an external frame-door, and a frame for the icon ([Figure 1](#)). The back polik was absent at the time of the receipt of the kiot for restoring.

The kiot presented for restoration was in unsatisfactory condition and needed a comprehensive restoration. It had obvious defects and destruction, both on the basis, on the decor and its decoration. Visual inspection of the product revealed defects in the carpentry base of the kiot and both frames with stucco mastic decoration in the form of divergence of “moustache” joints in the corners of the frames ([Figure 2](#)).

The kiot had external dimensions in 102 cm and 86 cm. The size of the window for the icon was 75 cm to 63 cm to 3 cm. The depth of the case in which the frame to the icon is installed was 15 cm.

Inside the wooden case of the kiot there was a frame for the icon with a classic ornament of stucco mastic decor. It is obvious that it was made in a baguette-frame workshop, and not in an artisanal way, but over the years of its existence, its finish has undergone serious changes in appearance.

In addition, there were unstable surface household contamination on both frames; strong persistent diverse surface contamination; distortions of the author's finishing of both frames of the kiot in the form of solid late bronzing; local losses of the ground-levkas and molded mastic decor to the wood of the kiot frame-door base ([Figure 2](#); [Figure 4](#)).

The discrepancies of the “moustache” glue joints in the corners of both frames were typical base defects for historical works made of wood. The strongest divergences from the shrinkage of fine-grained wood were observed in the inner parts of all corners. It also led to ruptures of the mastic corner decor and the separation of cherub heads from it.

On the inner frame to the icon there was a splinter of the base wood with a 13 cm long finish on the left pull just above the center on the listel (fillet) and a pothole of the ground to the base 11 cm long on the right pull also just above the center (also on the listel). In the lower part of the left spoon, the loss of soil to the base dimensions 8 cm and 0.5–1.0 cm.

Along the inner perimeter of the frame around the window under the icon there is a shelf with a cut, so blurred in shape that it was not possible to determine its pattern ([Figure 4](#); [Figure 5](#)).

Visual analysis of the decoration of the two kiot frames showed that they (the frame for the icon and the frame-door) did not previously belong to the same work of decorative and applied art. They were parts of different works interconnected into one product at a later time ([Figure 2](#)). For example, the frame for the icon had a traditional stucco decor, characteristic rather of a secular classical frame for a portrait. The belonging of this frame to the temple work is determined only by the heads of cherubs in the corners of the frame to the icon, which, unfortunately, were made from blind forms without subsequent study of reliefs ([Figure 3](#)).

These conclusions became possible thanks to the study of the technologies of execution of both kiot frames, the materials of decoration and their various techniques of execution. Visually, the frames differed from each other in the shape of the egg-and-darts and even in the colour of the bronzes. After the control cleaning of the finishing surface, the difference became even stronger in the colour of the revealed light author's gilding compared to the very dark finish of the outer frame-door. It also confirmed the conclusions about the different nature of the origin of these components of the kiot.

The presence of late bronzing on the surface of the frame trim did not allow to reveal the presence or absence of the author's or historical decoration of the kiot decor. To identify it and determine the technical condition of the author's finish, it was necessary to first perform a control surface cleaning of late bronze paintwork, determine the materials and methods of conducting this work, and only then determine the subsequent scope and list of restoration processes, activities and materials ([Figure 2](#); [Figure 3](#); [Figure 4](#); [Figure 5](#); [Figure 6](#); [Figure 7](#)).

The method of natural studies on frames was also of great importance at the time of experimental work in the form of control clearings, during which the selection of solvents was made to remove late layers in the form of uneven bronze paintings.

Based on the identified defects, a programme for the first stage of restoration activities was drawn up. It consisted of the following:

- 1) correct defects in the carpentry kiot base;
- 2) remove unstable surface contaminants;
- 3) remove strong persistent surface contaminants;

4) remove the late covering of the frame decor in the form of solid paints of the author's gilding by bronzing.

1. The kiot base with eliminating defects of the joinery base was restored in the restoration workshop by the artist-restorer of wood works of the first category A.V. Antonov, who restored the angular "moustache" joints of both frames and duplicated the kiot wood with the poplar tree wood. The restored kiot case was tinted with a stain and covered with a waterproof varnish. A new back polik, which was previously missing, was also manufactured.

2. There was cleaning of two kiot frames from various surface contaminants. Surface dust dirt was removed using a vacuum cleaner and a medium-hardness brush, complex strong ones in the form of caked dirt in the relief recesses were removed using small cotton swabs on a splinter or toothpicks moistened with solvent no. 4 pinen.

3. There was clearing two kiot frames from late bronze paintwork. The control clearing of the kiot finishing (in the upper left corner of the inner frame) made it possible to identify the presence of the author's finishing on the frame and the gilding methods used in its manufacture, select methods and materials for clearing the gilding surface from late bronze paintings, reveal the author's finishing on two frames, and determine the specific places of its loss ([Figure 1](#)).

This operation to remove the bronze paint from the decoration of the inner frame of the kiot icon was performed with great success with the help of cotton wool micro-tampons moistened with acetone. During the work, the tampons were replaced as they became dirty, and the process was performed to a clean tampon gradually and in layers with great care without damaging the surface of the author's adhesive gilding, both glossy and matte, on an adhesive binder. During this operation, technological breaks were made. Additional sampling of bronze paint in the relief recesses was performed with cotton wool micro-tampons moistened in acetone using toothpicks.

As a result of the first operation, it was possible to establish that the author's gilding on the icon frame had previously been subjected to unprofessional restoration by washing with water and most likely with soap. At the same time, both gilding types greatly suffered, both glossy on the polymer and matte on the adhesive binder, which resulted in significant uneven losses of both gilding types ([Figure 2](#); [Figure 6](#)).

When clearing the outer kiot frame-door, micro-tampons, moistened successively with solvents such as pinene, ethyl alcohol and their compositions, as well as Universal Flushing No. 1, were initially experimentally applied.

The binding thick varnish layer completely resisted the action of solvents, as it had a very dense oil varnish film and a large amount of powdered bronze in its composition. Only the method of "dry cleaning" with an eye scalpel with great care suited. At the same time, the gilding surface on the polymer was not damaged, since the bronze paint departed from the gilding surface by thick, hard scales. It took a lot of time to perform this operation. Then, an additional sample of individual places in the relief recesses was performed with a universal AS-1 flushing using a micro-tampon, an angular dental tweezers and a micro-swab on a toothpick to a clean swab. At the end of the cleaning process, the surface of the author's gilding was neutralized from the action of solvents with ethyl alcohol with a cotton wool swab on an angular dental tweezers or toothpick ([Figure 6](#); [Figure 7](#); [Figure 8](#); [Figure 10](#); [Figure 11](#); [Figure 12](#)).

Thus, the kiot case base and both frames were restored with returning its mechanical strength, the case wood was duplicated with the poplar tree wood, tinted and covered with a waterproof varnish on wood, and the back kiot polik was made. As a result of the complete removal of all surface contamination types and late bronze paintings by various methods, local losses of the author's ground-levkas and loss of mastic decor were revealed on two frames. The restorers managed to establish the volume and nature of the losses of the elements of the stucco mastic décor and local losses of decorative gilding of various types: glossy on a red-brown polymer and matte adhesive, which required replenishing their losses in places of scuffs and in areas of complete losses together with mastic decor.

Part Two

The information obtained as a result of natural studies and experimental work made it possible to compile and continue the restoration programme of the second stage of work:

- 1) conservation of the author's levkas;
- 2) reconstruction of local losses of the levkas soil;
- 3) reconstruction of local losses of stucco mastic decor;
- 4) local recreation of gilding on polymer;
- 5) reconstruction of local gilding losses on the adhesive binder;
- 6) tinting of losses and places of scuffs of the author's matte gilding.

1-2. Conservation and local recreation of the levkas soil

The author's levkas conservation and the local levkas losses reconstruction were combined in the implementation process into one operation, which consisted in gluing the levkas losses places to the kiot frame bases, made of wood, with aqueous solutions of natural mezdra glue successively 5%, 7%, and 10% concentration in a warm form with natural drying of the layers. After that, the side levkas reinforcement was performed within the boundaries of the losses, and then the complete losses of the soil were replenished by applying the restoration levkas to the wooden base surface to the desired height. Then the restoration levkas was leveled with extreme care with a scalpel and tools and ground dry with a water-resistant cloth of medium and fine grain to the smoothness necessary to perform glossy gilding.

3. Reconstruction of local losses of stucco mastic decor

Mastic to replenish local decor losses was prepared according to an old recipe from the book by A.M. Shepelev. Mastic composition was following:

- glue was 20% aqueous solution of rabbit skin glue with the addition of 1% antiseptic Katamin A-B (by weight of dry glue),
- chalk was MTD-2,
- rosin,
- natural linseed oil,
- newspaper paper, moistened with water and well pressed.

Local replenishment of minor losses of mastic decor and restoration of frame moustache joints in the places of breaks was performed by the method of manual finishing with adjustment in shape, relief height and location. After drying the individual decorative elements, they were

glued to the places of loss with a 20% aqueous mezdra glue solution and a load of canvas sandbags was placed on top of them for a day (*Figure 8; Figure 9; Figure 10; Figure 11; Figure 12*).

4. *Reconstruction of the loss of glossy gilding on the polymer* (gold weighing 2.0 g in the book). Gold consumption is 33 sheets.

4.1. An attempt to increase the effectiveness of training under the influence of a glycerin potion with a rotten egg white brush from a squirrel hair at a time (*Figure 13*).

4.2. Applying a restoration polymer diluted with rotten egg white with a squirrel hair brush up to four layers with natural drying of each layer (*Figure 14; Figure 16*).

4.3. Cutting and laying gold on the prepared areas with preliminary moistening of the water surface (*Figure 15; Figure 17*).

4.4. Preliminary polishing of gold with a fluoroplastic spatula.

4.5. Opening of the terminal device on the wound, protected from contamination, using a special device for removing stains (*Figure 15; Figure 17*).

5. *Reconstruction of matte adhesive gilding areas* (gold with a book weight of 1.4 g). Gold consumption is 19 sheets.

5.1. Gluing with a solution of warm rabbit glue of 5% and 7% successively in a warm form (+40°C) with a hair brush, a column of surfaces with scuffs of this type of gilding with drying of each layer for 2.5-3.0 hours.

5.2. Gold overlay on the water-moistened surface of the areas with surface drying up to two hours.

5.3. Polishing gold with a cotton swab.

6. *Tinting of losses and scuffs of the author's matte gilding*

The toning of matte gilding scuff areas was locally performed with metallic acrylic paint of the Ladoga company 7607963 “Maya Gold” in the “pointel” technique on a pre-laid layer of the lining of the watercolor paint “ochre light” with a column brush no. 3 with a glazing layer (*Figure 18; Figure 19; Figure 20; Figure 21*).

Thus, during the second stage of the restoration work, the restorer managed to perform a complex of works on the ground-levkas conservation and local soil reconstruction within the boundaries of the losses, followed by the treatment of the restored sections of the soil for gilding. As a result of the preparation of mastic based on the recipe from the book by A.M. Shepelev, it was possible to restore the dried “moustache” interfaces of both frames and local losses of the molded mastic decor in the form of egg-and-darts and loops. In addition, two types of gilding—glossy on a polymer and matte on an adhesive binder—were locally recreated. Conditional tinting with watercolour paints with using metallic paint of the Ladoga company 7607963 “Maya Gold” was performed on the matte gilding scuff areas with a column brush no. 3 with a glazing layer. Three weeks after the end of gilding, a matting composition was applied to the matte areas from a weak gelatin glue solution (3%) with the addition of a 10% alcohol solution of sandarac and a small amount of saffron infusion on ethyl alcohol. The matting compound gave the solution a warm yellowish tint under the old author's gold, preserved in large quantities on this monument.

Conclusion

The wooden kiot base and its two frames (the frame for the icon and the frame-door) were in an unsatisfactory state of preservation when they were received for restoration and required a

comprehensive restoration of all its parts: wooden case, two frames with stucco mastic decor and its various finishes. The author's decoration of the frame decor was hidden by late unprofessional bronze paints, under which no gilding was visible, so much they distorted the frame finish.

Visual analysis of the work showed that both frames were made at different times and later adapted to each other, since by all external signs the outer frame-door was foreign to this kiot and differed from the inner frame both in style and decoration. The door frame bronzing was done in a different way, using a different technology than on the inner kiot frame. It differed in colour and considerable thickness and density of the late paint coating.

The ornamental part of both frames was made using mastic stucco decoration made of chalk-glue mass, characteristic of the works of factory baguette-frame production of the late 19th century and early 20th century.

Prior to deciding the finishing of these two frames, the late bronze paintwork was completely removed from the author's finish surface. Even with a visual inspection of the surface, it was obvious that these two frames were cast at different times and on different binders, since they differed sharply from each other in colour because the inner icon frame was much lighter than the outer frame-door. Everywhere on the frame there were visible scuffs to the ground layer, mostly shapeless and various traces of unprofessional restoration after washing the gilding with water with its partial destruction to the ground-levkas.

After removing the late bronze paintwork, the preservation state of most of the decorative finishing of both frames could be assessed as unsatisfactory, since significant losses of the author's glossy and adhesive gilding were revealed. Glossy gilding has been preserved locally, it has lost its appearance and luster of cast metal, has been heavily worn to the ground and contaminated. The exception was the large listels (fillets) of the icon frame on which the author's matte gilding was preserved much better, albeit with large scuff areas.

Thanks to the well-coordinated and consistent restoration and conservation processes performed on the monuments, professional craftsmen—the artist-restorer of wood and the artist-restorer of gilding—managed to restore the former exposition appearance of the kiot base, the icon frame and the frame-door.

The tasks assigned to the restorers' team to return the exhibition appearance to the kiot were fulfilled and the purpose was achieved. The restorers managed to preserve this monument for further use in the temple, that is, to fulfill the main task of the restorers—to preserve the cultural church heritage.

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Appendix



Figure 1. General kiot view with uneven bronze paints before restoration with control surface cleaning before decorative finishing of the author's layer



Figure 2. Fragments of the kiosk before the complex restoration. Distortions of the finishing of two kiot frames with bronze paints and subsequent washings of the author's gilding



Figure 3. A fragment of a frame with a cherub's head with unprocessed details of mastic molding



Figure 4. Surface contamination, ruptures of the base of the kiot by "mustache" connections, loss of the author's levkas (bottom right)



Figure 5. The loss of the mastic stucco decoration of the egg-and-darts on the outer frame-door and the divergence of the "moustache" joints of both frames in the corners



Figure 6. Defects of the author's gilding of two types in the form of strong scuffs of glossy and matte gilding, revealed under the bronze paints on the surface of the author's frame finishing



Figure 7. The half-clearing of the icon frame from the late bronze paintwork and the revealed state of preservation of the author's decoration



Figure 8. The kiot frame fragment after removing solid bronze paintwork before restoring the wooden base and installing the missing mastic fragments at the places of their loss



Figure 9. Reconstruction of local losses of mastic decor by hand and subsequent drying of fragments



Figure 10. Reconstruction of local mastic decor losses in the upper part of the door frame and mastication of frame joints in the corners of the icon frame



Figure 11. Reconstruction of local losses of mastic decor in the left part of the door frame. Installation of recreated mastic decor fragments at the place of local losses of the author's decor



Figure 12. Recreating local mastic decor losses on the outer door frame



Figure 13. The icon frame fragment before the restoration of gilding in the severe scuffing area of gilding of two types: glossy and matte



Figure 14. The icon frame fragment with a primer polymer applied to the upcoming glossy gilding areas



Figure 15. Trial gilding on the polymer on the outer listel of the inner icon frame in the severe abrasion area (right). The icon frame fragment with polished gold on the outer frame pull



Figure 16. The author's gilding scuffs on the cut of the egg-end-darts and the polymer application for trial egg-end-dart gilding on the inner kiot frame



Figure 17. Reconstruction of mastication in the corner joints of the icon frame and the loss of glossy gilding on the egg-end-darts cutting the icon frame and trial egg-end-dart gilding on the inner frame



Figure 18. Scuffs on matte gilding areas on a large listel before tinting at the loss sites



Figure 19. Tinting of matte gilding scuff areas on matte gilding loss areas and glossy gilding restoration on the door frame egg-end-darts

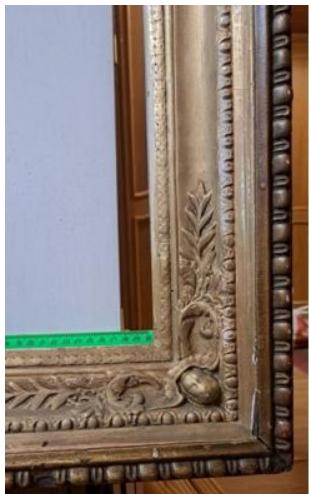


Figure 20. The lower right kiot corner before and after the restoration of two types of gilding



Figure 21. The front side of both kiot frames after a comprehensive restoration of the base, the loss of stucco decoration and gilding of two types